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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/483,542	01/14/2000	G. Douglas Antuma	SLU02P-303	8523

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EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
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2123

DATE MAILED: 09/05/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/483,542

Applicant(s)

ANTUMA, G. DOUGLAS

Examiner

Fred Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

1. *Claims 1-26 have been presented for examination based on applicant's amendment filed 9 July 2003 (paper #4). Claims 1-26 remain rejected by the examiner.*

Response to Arguments

2. *Applicant's arguments filed 9 July 2003 (paper #4) have been fully considered.*

Regarding applicant's response to objection to the drawing: Applicants have argued that drawings represent embodiments of the operation of the claimed invention and, hence, do not require a prior art label. The examiner concurs and withdraws the objection to the drawings as requiring a prior art label. However, the application has been filed with informal drawings that are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Regarding applicant's response to 112(1) rejection: Applicants have argued that the amendment to the claims is sufficient to overcome the 112(1) rejection. The examiner asserts that while it is understood that one can represent 2D and 3D objects using AutoCAD, applicants are claiming limitations relating to positioning and sectioning three dimensional building structure volumes, two dimensional building structure profiles, and component profiles. The specification indicates that "the present invention uses a plurality of LISP modules that customize an AutoCAD 2000" to provide these features (see specification page 5, line 10), but the specification does not teach specifically how one would "customize" the AutoCAD 2000 software (with LISP modules) such that one skilled the art could make and/or use the claimed invention

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without undue experimentation. (i.e. provide, position, and section three dimensional building structure volumes, two dimensional building structure profiles, component profiles, etc.) Accordingly, the examiner maintains the 112(1) rejection of claims 1-26.

Regarding applicant's response to 102(e) rejections: Applicant's arguments regarding 102(e) rejections using Cox as prior art are persuasive. The examiner withdraws the 102(e) of claims 1-26 in view of Cox. However, the examiner has now applied new 102 art rejections. (please see below)

Regarding applicant's response to 102(b) rejections: Applicants have argued that prior art (Oota) does not teach utilizing a two dimensional representation building structure profile, sectioned from a representation of the three dimensional building structure volume, to determine where to position various structural and non-structural components within a building structure. The examiner asserts that Oota clearly teaches positioning various structural and non-structural components within a building structure. (see Fig. 6, 12, 19), two and three dimensional building structure profiles (see figs. 6(3), 6(6), 11(1), 11(3)), and structural volume (inherent - see Figs. 20, 25, 26, 30, 12) in determining component position. As cited in the prior action, the specification for the claimed invention is delinquent in areas previously cited under 112(2) rejections, the examiner has made prior art rejections based on the limited scope of information provided by the disclosure.

Accordingly, the examiner maintains the 102(b) rejection of claims 1-26.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. ***Claims 1-26 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.***

Specifically, independent claims 1, 10, and 16 each recite limitations relating to a method, system, and computer code for volume detailing that includes the steps of; providing a three dimensional volume, positioning a three dimensional component, and sectioning the three dimensional volume, but does not provide a technique, algorithm, or sufficient description of how any of these steps are accomplished. The specification does not specifically disclose how a three dimensional volume is provided, how a three dimensional component is positioned, or how the three dimensional volume is sectioned, sufficient to allow one skilled in the art to make and/or use the invention.

While the disclosure has stated on page 5 that "the present invention uses a plurality of LISP modules that customize an AutoCAD 2000" no algorithms or computer listing are disclosed that specifically show how a three dimensional volume is provided, how a three dimensional component is positioned, or how the three dimensional volume is sectioned by these LISP modules. Applicants' are reminded that they have claimed the

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method, computer code, and system for these limitations. Dependent claims inherit this defect.

While the specification for the claimed invention is delinquent in areas previously cited under 112(2) rejections, the examiner has made the following prior art rejections based on the limited scope of information provided by the disclosure.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent 5,740,341 issued to Oota et al.

Regarding independent claims 1, 10, and 19: Oota teaches a CAD system for detailing a **building structure** that allows design and **placement** and routing of **three-dimensional structural components** (including volume) such as piping and air conditioning **ducts** and considers **obstructions** with building structural bodies (trusses

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*etc.) extending through a **point of interest**. (Abstract, Summary of Invention, CL2-L22-55, CL13-L55, CL15-L43, CL20-L31, CL27-L50, Figs. 5-11, 13-18, 20-21, 25-27, 32-35)*

At column 2, line 22 Oota recites:

"In a preferred embodiment of the present invention, the three-dimensional space mapping means has a means of laying out and displaying a plurality of components on the preset plane in a three-dimensional arrangement space in which these components are to be laid out in keeping the interconnections. In arrangement display, it is preferable to display a specific component in a three-dimensional display way according to its attribute information such as the specification, shape, material, etc. of the component."

*Per dependent claims 2-9, 11-18, and 20-26: Oota considers component **interference checking** (CL10-L23), **predetermined shapes** (CL11-L45, Fig. 8), **structural bodies** (trusses, catwalks, etc. – CL15-L43), **surfaces** (outer, top, etc. – CL13-L55), component **volume computation** (CL27-L50), and **air conditioning ducts** (CL31-1).*

Claims 1, 10, and 19 are also rejected under 35 U.S.C. 102(a) as being clearly anticipated by "Building Simulation: State of the art and the role of IBPSA" J. Hensen, University of Strathclyde, IBPSA September 1999.

Regarding claims 1, 10, and 19: Hensen discloses an AutoCAD computer based building structure detailing system capable of one, two, or three dimensional representation of building structures, related volumes, positioning of components, and sectioning of the building structure. (Abstract, pages 3-6, Figs. 2, 4, 5)

Claims 1, 10, and 19 are further rejected under 35 U.S.C. 102(b) as being clearly anticipated by "OSCONCAD: A Model-Based CAD System with Integrated Computer Applications", F. Marir, Itcon, Vol. 3, July 1998.

Regarding claims 1, 10, and 19: Marir discloses a computer based interactive system for representing CAD construction and architectural design applications consisting of two and three dimensional building elements, shapes, volumes, and allows the visualization of various elements showing sectional views of buildings, related components, and their locations. (Summary, 3.0, 3.1, 3.2, 4.0 – 4.3, 6.0, Figs. 1-3, 5-7)

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, ***THIS ACTION IS MADE FINAL***. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire ***THREE MONTHS*** from the mailing date of this action. In the event a first reply is filed within ***TWO MONTHS*** of the mailing date of this final action and the advisory action is not mailed until after the end of the ***THREE-MONTH*** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.

U.S. Patent 5,557,537 issued to Norman et al teaches CAD design of three-dimensional building distribution systems.

U.S. Patent 4,551,810 issued to Levine teaches CAD-CAM design of building conduit and duct networks.

"Reconstruction of 3D Virtual Buildings for 2D Architectural Floor Plans", C. So, ACM 1-58113-019-8/98/0011, ACM November 1998 teaches 2D and 3D structural simulation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

The Official Fax Numbers are:

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Fred Ferris, Patent Examiner
Simulation and Emulation, Art Unit 2123
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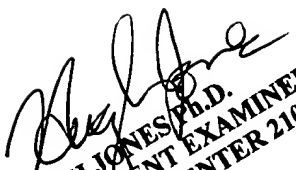
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August 29, 2003


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